

ASTM International Committee F40 on Declarable Substances in Materials

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Declarable Substances in Materials**

**Restricted Substances in Materials: Testing and Reporting
Procedures Workshop
National Institute of Standards and Technology
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Overview: ASTM International

- **Established 1898**
- **Not-for-profit**
- **~30,000 members**
- **115 countries**
- **Maintains over 12,000 standards published in 77 volumes**
- **Voluntary standards, used internationally**



Overview: ASTM International

- **Standard development**
 - **Consensus process**
 - **Balanced committees**
 - **Each member has a vote**
 - **All negative votes and comments must be addressed**
 - **Standards reviewed every five years at maximum**



Overview: ASTM International

- **Types of documents produced:**
 - **Material Specifications**
 - **Product Specifications**
 - **Test Methods**
 - **Terminology**
 - **Practices**
 - **Guides**



How Standards Are Used by Industry

Material and Product Specifications

- Describe detailed requirements
 - Material grades
 - Usage (Scope)
 - Physical/Chemical properties
 - Dimensional tolerances
 - Packaging/labeling
 - Acceptance criteria
 - Reference test methods
 - Terminology

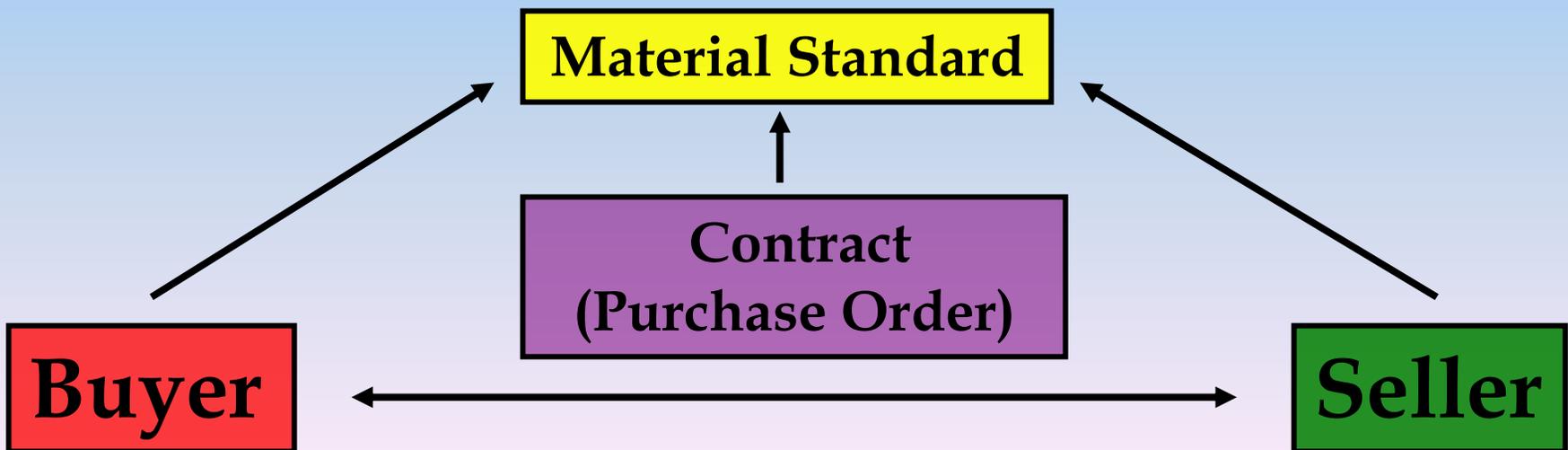


How Standards Are Used

Material specifications (standards) are quite often referenced in purchase orders.

This greatly simplifies ordering, particularly where requirements are complex.

Both parties (buyer and seller) have access to the standard.





How Standards Are Used by Industry

Example: Material Specification

Buyer: Plastics manufacturer

Seller: Chemical supplier

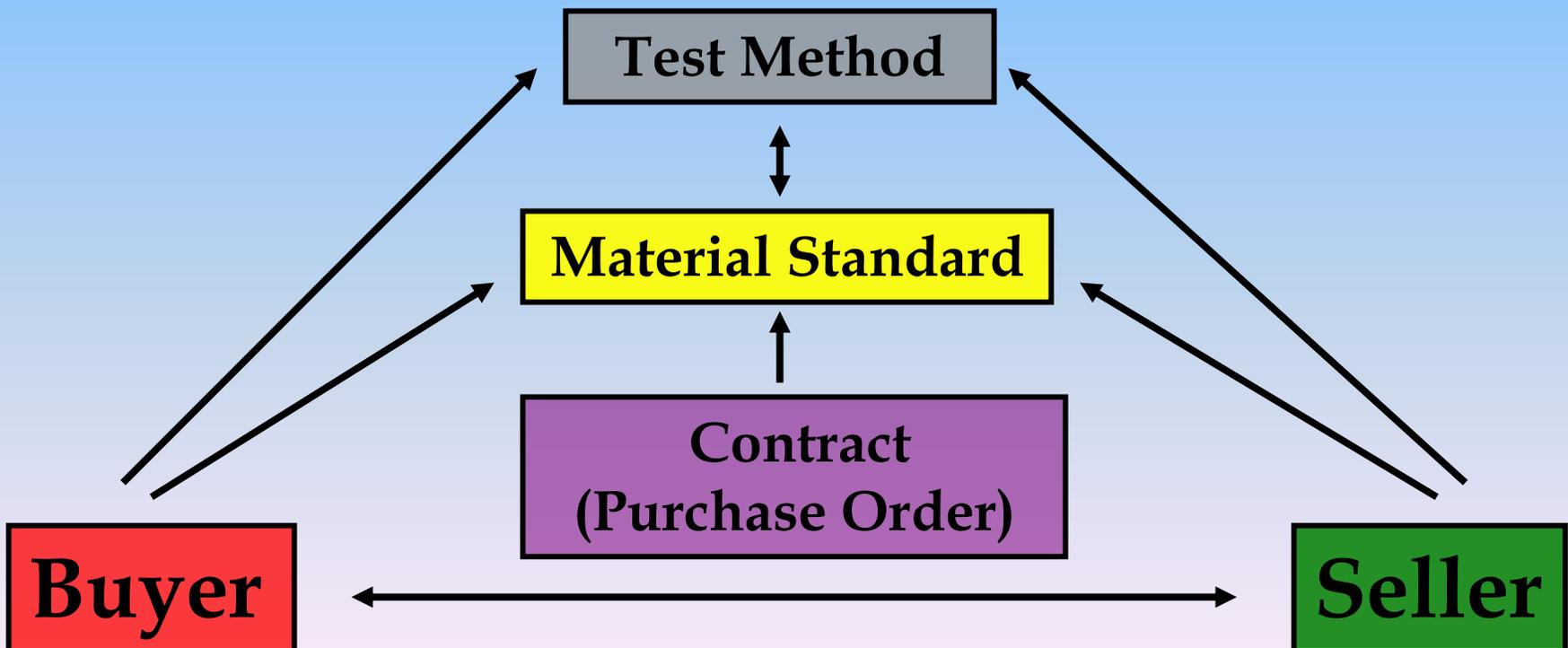
Material: Calcium Carbonate Type GC, Grade III

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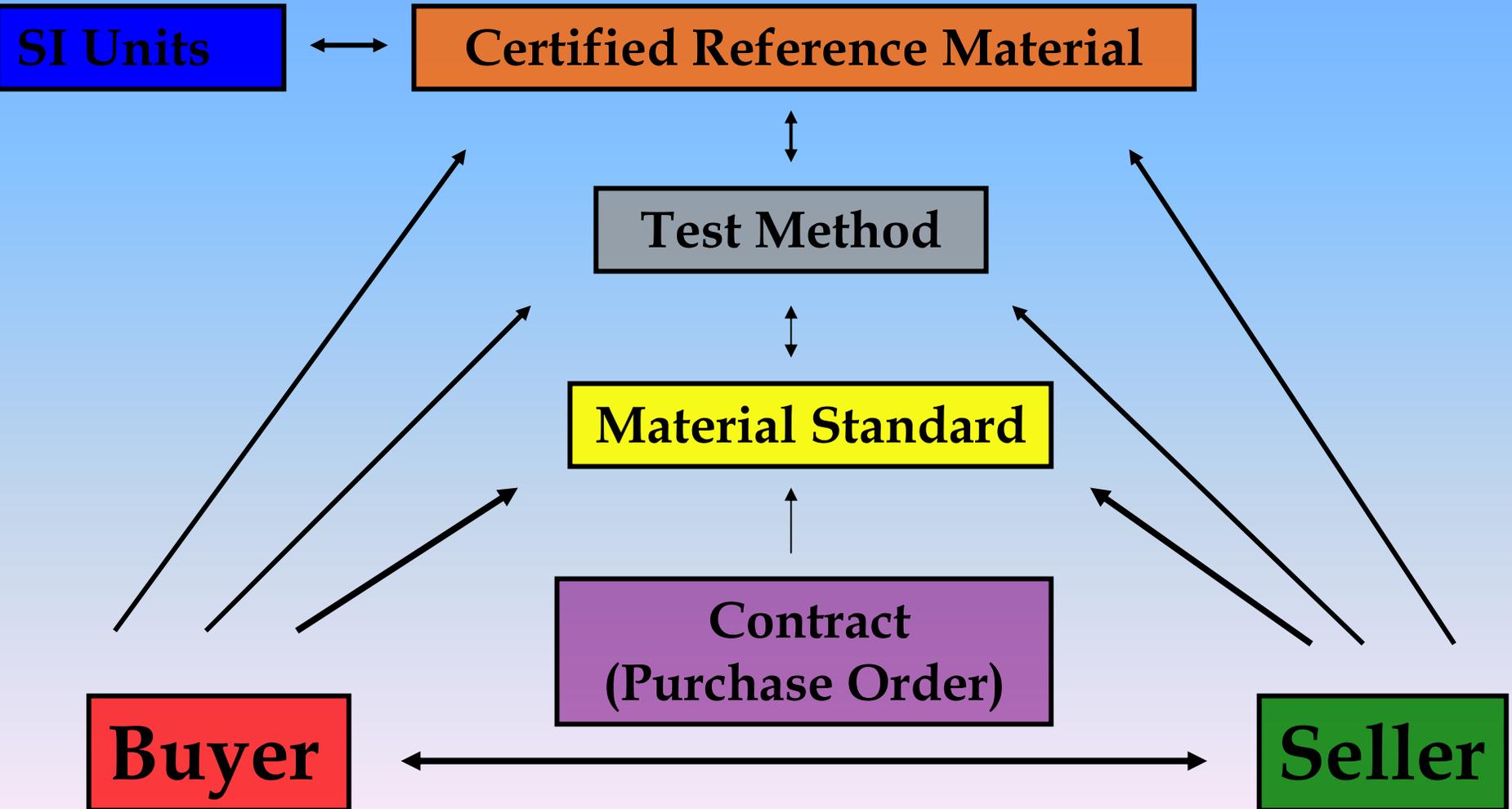
How Standards Are Used

A standard test method is used to check whether the technical requirements of the material specification have been, or will be, met. Both parties have access to the standard test method.





Standards and Conformity Assessment Model



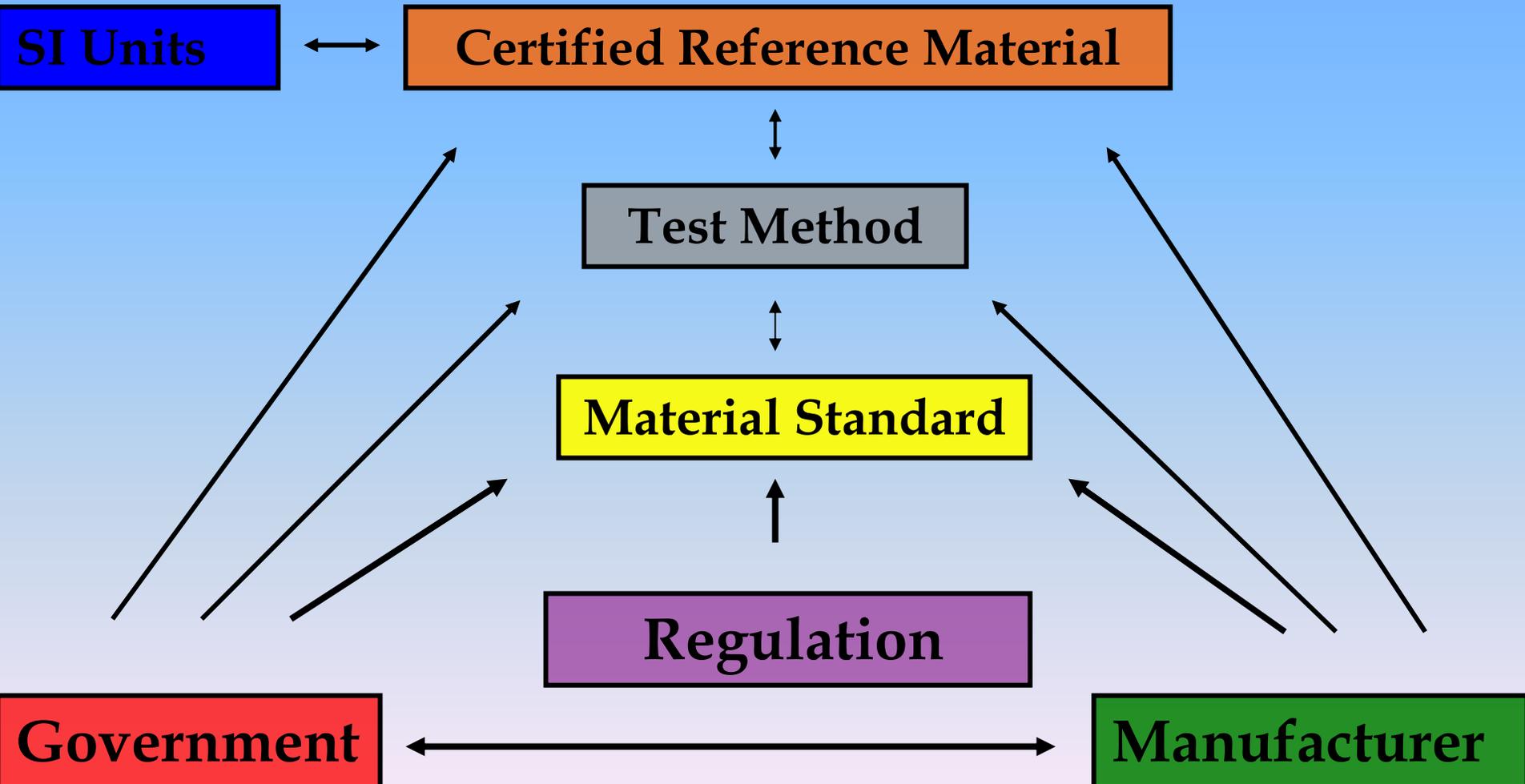


Standards and Conformity Assessment Model

- The model as described allows check and balance between parties
- The model allows purchase orders to be assessed as legal contracts
 - Requirements are clear
 - Assessment of conformance is possible
 - Proof of nonconformance can lead to remedy
 - Supporting conformance data is legally defensible, if test is done correctly.



Standards and Conformity Assessment Model





Standards and Conformity Assessment Model

- The model is applicable to regulations as well as purchase orders
- Government becomes the “buyer” or the “assessor”, and the manufacturer becomes the “seller”, or the “complier”.
- Manufacturers must be able to assess products for conformance to regulations well in advance of effective date.
- Any supporting data must be legally defensible.



Substance Restriction Laws

European Union:

- **Dangerous Substances (76/769/EEC)**
- **Cosmetics (76/768/EEC)**
- **End-of-Life Vehicles (2000/53/EC)**
- **Batteries (91/157/EEC)**
- **Packaging and Packaging Waste (94/62/EC)**
- **WEEE (2002/96/EC)**
- **RoHS (2002/95/EC)**



Substance Restriction Laws

United States:

- **California Electronics Recycling Act (SB20/SB50)**
- **Maine Electronics Waste (Title 38, Chapter 16, 1610)**
- **Maryland Electronics (Computer) Waste (HB-575)**
- **24 States considering laws**
- **US House “Computer Hazardous Waste Infrastructure Program Act”**



Substance Restriction Laws

Other Countries:

- Canada
- Japan
- China



Substance Restriction Laws

- **Common theme:**
 - **Protection of human health and environment**
 - **Regulate products, materials, chemicals**
 - **Focus on what to do, not how to do it**
 - **In general, easier to tell someone what to do than for someone to do it, particularly when consequences are complex**



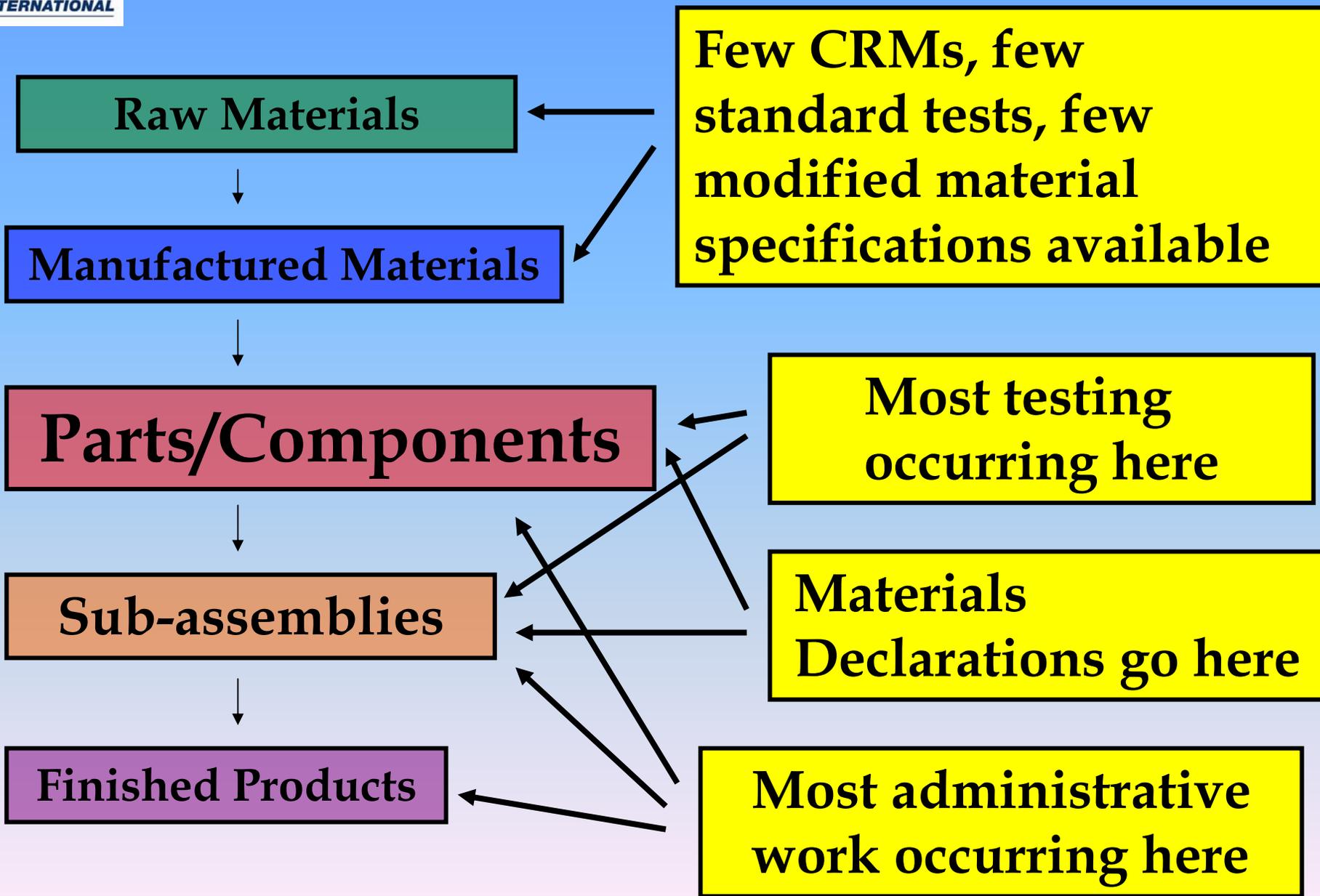
Substance Restriction Laws

- Without standards and CRMs, conformity with contracts and regulations difficult to assess
- Buyer (or government) makes demands on seller (or manufacturer), but demands are difficult to meet in legally defensible manner
- “Due Diligence Defense” and “Supplier Declaration of Conformance” puts burden on Seller (Supply Chain)



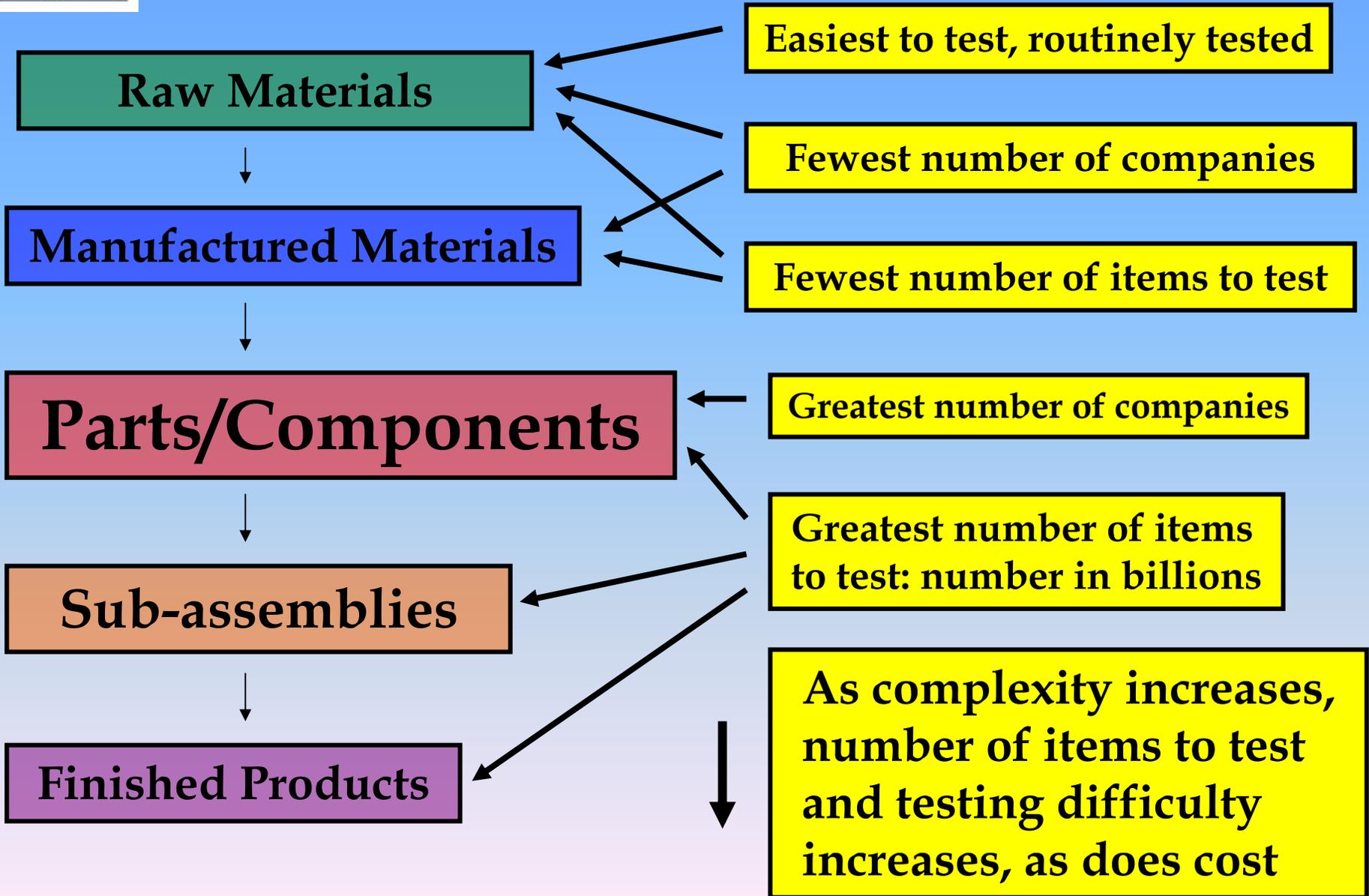


Supply Chain Model - Current Situation





Supply Chain Model - Analysis





ASTM International Committee F40 on Declarable Substances in Materials

- Created to address deficit in standards**
- Focus on chemicals and materials**
- Will not dictate standards; will liaise with other ASTM committees, SDOs**
- Goals are to reduce costs, educate, inform, build/modify infrastructures**
- Help companies achieve legally defensible position via standards and conformity assessment model**



ASTM International Committee F40 on Declarable Substances in Materials

- **Subcommittees**

- **Test Methods**
- **Terminology**
- **Management Practices and Guides**
- **Monitoring of Legislation and Regulation**
- **Existing Document Research & Liaisons**
- **Executive**



ASTM International Committee F40 on Declarable Substances in Materials

- **Standards under development**
 - Terminology (had first vote) WK7381
 - Declaration of conformance with materials content requirement WK9114
 - Guide for risk assessment when assessing conformance or compliance with requirements WK9115
 - ICP method for aluminum series 1000 (E01)



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- **Notes on risk assessment:**
 - Intentional addition vs. contaminant
 - Material/Chemical suppliers best equipped to do risk assessment
 - Reduce superfluous tests, requests
 - Necessary step before pursuing CRMs, tests
 - Examples: organics/mercury in steel; cadmium in metals and alloys



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- **Recommendations/Needs**
 - Time is greatest need
 - Efforts to educate government about industry needs concerning standards
 - Chemical/material suppliers/trade associations must be involved in risk assessment
 - Need CRMs/RMs/Research
 - Long term committment